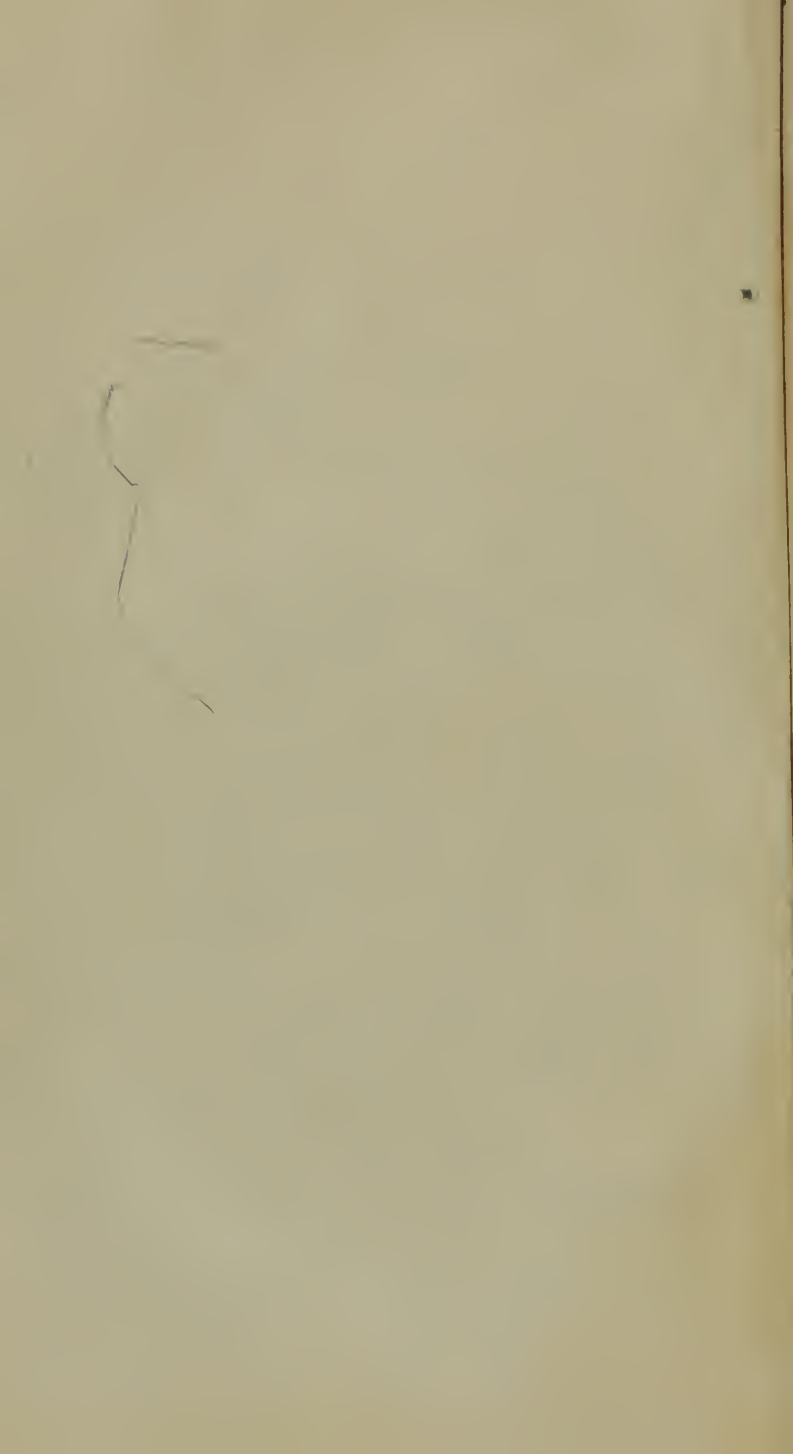


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Jackson
AN

INTRODUCTORY LECTURE

TO THE

INSTITUTES OF MEDICINE

BY

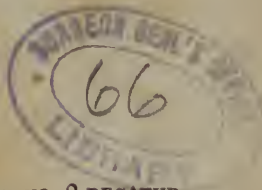
SAMUEL JACKSON, M. D.

ASSISTANT TO THE PROFESSOR OF THE INSTITUTES AND PRACTICE OF MEDICINE
AND CLINICAL PRACTICE IN THE UNIVERSITY OF PENNSYLVANIA, VICE
PRESIDENT OF THE PHILADELPHIA MEDICAL SOCIETY AND OF
THE COLLEGE OF PHARMACY, MEMBER OF THE AME-
RICAN PHILOSOPHICAL SOCIETY, PHYSICIAN TO
THE ALMS-HOUSE INFIRMARY, &c. &c.

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STREET.
1830.



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MR,

At a meeting of the Medical Class of the University of Pennsylvania, held this afternoon, we were constituted a committee to request a copy of your Introductory Lecture to a course on the Institutes of Medicine, for publication.

It affords us much pleasure to add, that this application was attended by an immediate and unanimous desire of the students. By complying to their wishes, you will confer a particular favour on them, and a gratification to the medical public.

Yours, sincerely and respectfully,

THOS. F. BETTON,

WM. T. CRAIN,

SAML. J. HOBSON, M. D.

SAMUEL JACKSON, M. D.

Philad. Nov. 10th, 1830.

GENTLEMEN,

I received, this day, your favour of the 10th, informing me of your appointment by the Medical Class, and its object.

I did not expect to publish the Introductory Lecture of which you have requested a copy, nor felt desirous it should be done; but I know not how to refuse a desire so flatteringly expressed by a class of so much respectability as to numbers and to character, and who have honoured me by this mark of their approbation. A copy of my lecture will, therefore, be placed at your disposition.

I beg to present, through you, to the class my grateful acknowledgments, and offer personally to yourselves the homage of my sincere esteem.

SAMUEL JACKSON.

To Messrs. THOS. F. BETTON,

WM. T. CRAIN,

SAML. J. HOBSON, M. D.

Philad. Nov. 12th, 1830.

INTRODUCTORY LECTURE.

GENTLEMEN,

YOU have been induced to resort to this metropolis, from different and distant portions of our extensive country, in the pursuit of knowledge. You assemble in these Halls, dedicated to the cultivation of medical science, that you may derive instruction from the lessons of teachers, in the sanctioned learning of past ages, and the matured experience and disciplined observation of the present enlightened era.

YOU have engaged in a generous and illustrious undertaking. What more becomes intelligent beings, what more exalts their character and refines their nature, than the acquisition of knowledge? What knowledge is more worthy their attention than the knowledge of themselves—the study of their physical organization; their intellectual and moral endowments, the phenomena displayed in their corporeal frame, and the phenomena distinguishing the faculties of the intellect?

As subjects of a rational curiosity, none can incite to investigation with a warmer interest; as the occupation of the gifted intellect, none are more deserving its profoundest research. *Nosce teipsum*—know thyself—was the compendious philosophy of the moral sage of antiquity. And that knowledge truly com-

prises the only means of the permanent improvement and progressive happiness of man.

But in medical science, and in your pursuits, this knowledge embraces a wider range, and extends to more important concerns than engage the attention of the mere speculative moralist or meditative sage. Your profession and your pursuits are not restricted to yourselves. They belong to mankind; they are devoted to the removal or the alleviation of the most frequent, the most afflictive, and the most destructive of the calamities that befall our race.

You study man in his physical organization, develop the mechanism of his frame, that you may regulate its movements, and modify the phenomena constituting his life.

You extend your investigations into his intelligence; examine and arrange its faculties; analyse their operations; determine their phenomena; establish the order of their development—and their relative powers; that you may controul their activity, balance their forces, and preserve to man his attribute of a rational being, and a responsible moral agent.

What loftier profession or more illustrious occupation! The complicate machine of man is the most perfected of the Creator's works, in this sphere. Yet it is this perfect mechanism our science attempts to resolve into its elements; whose structure it explains; whose movements it professes to direct, and whose defects it undertakes to repair. It is not mere physical forces the medical art assumes to itself to influence, in order to modify physical phenomena, operating on physical objects; it assumes the task of regulating vital laws, of modifying vital phenomena,

affecting the existence of man—our acts involve his life or his death. How responsible, you perceive, is the office for which you are about to prepare yourselves; how solemn and weighty the duties of the profession of which you have become aspirants.

The enterprise you have commenced is replete with difficulties. You have not entered on a pleasure-ground arranged for amusement, where art has exhausted its means to smooth the asperities of the path, and to flatter the senses with indolent and luxurious gratifications. You have commenced a career honourable but arduous, in which you will find obstacles to oppose, and entanglements to embarrass your progress. But, in human affairs, such invariably is the road that conducts to honour, wealth, and distinction. The mere facility of attainment renders the object valueless; the difficulty of seizing the prize enhances its worth. The richest pearl is found only in the greatest depths, and is the reward of him capable of the boldest and most strenuous exertions.

To insure a successful result to your labours, the first step is to form a just estimate of the nature and extent of your undertaking. I propose, therefore, as a subject appropriate to the introduction of this course of instruction, to present to you in a cursory manner, some observations on the character of medicine as a science; the means of its improvement; the proper mode of pursuing its investigations, and its capacity of becoming a science of positive facts.

IN the circle of the sciences, some have been dignified as the exact, while others are characterised as possessing uncertainty. It may, with propriety be questioned, whether any, except the high and transcendental mathematics, from the imperfections attached to human agency, and attending on physical means, can be considered as possessing absolute or positive certitude.

Two sources of uncertainty attach necessarily to all science. The one arises from imperfect acquaintance with phenomena, and consequently defective knowledge of principles or fundamental facts. The other, from the imperfections and the properties of the agents, by which practical operation can alone be given to principles.

The most certain of the sciences are those whose principles are accurately determined, and whose operative means, having the fewest imperfections, and opposing the least contrariant properties, lead to the fewest errors. Such are some branches of Natural Philosophy—as Astronomy, Mechanics, Hydraulics, Optics, Chemistry.

Those sciences whose principles are equally fixed, yet whose practice, from the nature of the agents employed, is defective, are of less certain character. And a third class, which are the most uncertain, are those whose principles are still floating; are yet to be determined, and the means of whose practical application are liable to great variations, and numerous imperfections, or are but imperfectly known.

To this last class belongs Medicine. The uncertainty attached to medicine is not, however, inherent in the science. It is to be attributed rather to the manner in which the science has been, as

yet, cultivated, than to the character of the science, or the nature of its principles.

Truth, in medicine, has been sought for in every direction, but that in which alone it can be found. The organism, or the animal structure, from which alone correct responses are to be expected, has been the last to be interrogated for the explanation of its own phenomena. Every thing in nature has been questioned and examined, and every branch of metaphysical and physical knowledge has been invoked, in the futile expectation they would enlighten the depths of our science, and arm the practitioner with potent means of absolute and specific virtues. Can we be surprised, then, that medicine, followed in this spirit, has been a region of romance, filled with chimeras, and peopled with the vain phantoms of imagination.

No small portion of what was intended for reasoning in medicine, was, under this fatal influence, merely hypothetical disquisition, unsustained by positive facts; and much of what was believed to be facts, admitted without a question, was absolutely conjecture, unsupported by a single demonstration. Can we be surprised, that, guided by this false philosophy, medicine should have been but little progressive, that with all the mighty efforts of the master spirits who have attempted to hold it in their sway, and to check its wanderings, it continued to defy their attempts to give stability and fixedness to its principles, or permanency to its practical attainments?

What else could be expected from a science thus cultivated, than error, confusion, uncertainty, and a never ceasing fluctuation of opinions, doctrines, and practice.

To launch on the wide ocean without a fixed point to steer by, or compass to guide, can have no other termination than endless peregrinations, repeated disasters, and overwhelming shipwreck. Various combined circumstances concurred to introduce into medicine, and have continued to perpetuate, the false systems that have detained it from its true route, and thrown it in arrear of its collateral departments of science.

Some of these, the influence of which is still felt, it will be proper to indicate in this place.

The first, to which I call your attention, is the error committed by physicians, in blending, in a common category, the psychological or spiritual, and the physiological, corporeal, or organical natures of man. The first, changeless in its nature, and immortal in its thoughts, connects him with eternity; the last, frail in its elements, gross in its instincts and wants, makes him the subject of time, and links him to material agencies.

Filled with thoughts beyond the limit of this fame, man has universally been disposed to draw his lineage from the skies, and has possessed the audacity, in the vanity of his presumption, to proclaim himself a deity. Priding himself on his assumed prerogative of an immortal spirit, it was regarded as the sole regulator of his existence, and he repelled the idea, that his corporeal system, though transient in its duration, subjected to numerous irregularities and imperfections, and doomed to the same decay as the physical objects encompassing him, was assimilated in its nature to that of the reptile which crawls the earth, or the animals subservient to his wants: he rejected the thought that heaven-aspiring man was to be treated as the mere being of this earth;

that he was to be investigated in the same mode, and examined by the same rules of observation and reasoning, applicable to the physical forms of matter—the mineral, the plant, or the brute.

These principles and reasonings were introduced into medicine, and converted it into a department of metaphysics.

But the psychological principle of our existence, is not placed within the reach of our knowledge. That is the secret of futurity, to be revealed in the higher order of being to which we shall be called, and the more exalted sphere of intellectual and moral excellence to which man is destined. When,

In sight of angels and immortal minds,
As on an equal theatre he joins
In contest with his equals, who shall best
The task achieve, the course of noble toils,
By wisdom and by mercy pre-ordained.

All our positive knowledge, from the grossness of our organs, is limited to material phenomena; and this is true, as applicable to the human structure. We want the means of communication with a spiritual world. All that influences, all that acts on our economy, whatever extends a modification into the mode of action of our organs, whether sustaining, disturbing, or restorative, is material in its nature, material in the power it exerts. But that which is material cannot affect that which is immaterial, and it is consequently our corporeal organs, the phenomena they display, the order in which they are connected, and the agents capable of influencing them, that are embraced in the science and profession of medicine. If this view of our science reduce the ambitiousness of its pretensions, it brings it within the range of the certain

sciences, and augments its utility, as to the objects of its institution.

The ideas formed of vital phenomena, abstracted from the nature of the organs, and their modifications, as determined by our senses, must be, as they always were, deficient in precision.

A second source of error in medicine not yet eradicated, consisted in the vain research of first causes, and the indefinite multiplication of first causes. It has been the constant resort of the ignorant to solve every difficulty, and to explain every physical enigma, by the personification of a principle, or the aid of a first cause.

In periods of darkness and gross superstition, this practice, in religion, created innumerable hosts of divinities. The earth and ocean, the clouds, the forests, and the streams, swarmed with deities, to whose immediate agency every phenomenon in the physical and moral world was ascribed. Disease was the infliction of the vengeful god, whose worship had been neglected, or whose altar had been profaned, and to be relieved, the incensed deity must be appeased by holocausts and offerings.

Similar ideas were ingrafted into medical doctrines and practice, which, in the conscious defect of its principles and impotency of its means, borrowed assistance from every source. It is long since that the grossness of this superstition has departed from our science, yet the habit of reasoning in which it originated still continues, and sentiments of analogous character are to be perceived. The practice to which I allude, is the kind of personification given to diseases. From the language in which they are described, and their consequences detailed, they might be sup-

posed a kind of entities, each having a specific or peculiar nature, seizing each on an organ, where it sat enthroned, and like a tyrant, ruling to destroy. Medicine to this day continues to be infested with ontology. The means, that in conformity to principles like the above, by which diseases are to be combatted, consisted in the discovery of specific remedies, having powers inimical to the disease, by which the intruder could be destroyed or expelled from the system.

These opinions were widely extended in medicine—exert over medical opinions at this moment no inconsiderable influence, and govern altogether the vulgar belief.

Whatever may be the essential nature of the principle, in which life originates, its influence is displayed only in organic matter. We have no other knowledge of its existence than the phenomena presented to us in organic matter. But these phenomena differ, in the different classes of living beings, as in vegetables and animals—as the fucus and the oak—the polypus and man; in the same individual in different organs or tissues,—as in nervous substance and in tendon, or in bone; in the same organs in different periods and states,—as in the brain in infancy and adult age, the genital system in youth and manhood; as in the eye when in a state of inflammation or a sound condition; the brain and nervous system when awake and asleep; in syncope, in stupor, convulsions, and paralysis. These differences are regular, constant, uniform, extended through all generations, uninfluenced, or but slightly, in all the changes of time and condition. It cannot then be denied, that the manifestation of vital phenomena depend on, and are closely linked to the organic structure and its

actions; that vitality has its established laws, by which vital actions and phenomena, in a state of health or of disease, are governed in a uniform, invariable manner. It is, then, the organism, the nature of its elements and their properties; its organs, their modifications, their actions, and the phenomena originating from these actions, it is the business of the medical philosopher to study and to determine. These are the sole objects of our science. They are cognizable by our senses; they are appreciable by the understanding; they can be made the subject of our experiments. To investigate, and to elucidate them, it is not necessary that we should inquire into, or become acquainted with, the essential nature of the first or final cause of life. These subjects belong to the subtle inquiries of the metaphysician. Could we understand them, our knowledge would not be materially advanced—and all researches into matters so abstruse and incomprehensible, may be dismissed, as equally vain and frivolous. It is sufficient for us to know, as an ultimate fact, that vitality consists of certain phenomena of organization, and the movements of organized matter; as gravity, affinity, electricity, and magnetism, are also certain specific phenomena and movements, manifested only by material bodies. Our business, then, is with organised structure, vital or organic movements, and phenomena. Their different modes or states of existence, the changes they experience, and the consequences of those changes, are the objects of the contemplation and experiments of the Physiologist and Pathologist. They are susceptible of calculation, of being arranged into definite series, and, I am persuaded, are capable of being, and may ultimately be reduced to as much system and certainty, as are the phenomena

and laws of caloric, gravity, electricity, and affinity, although the first causes or powers that occasion those phenomena are unknown. Medicine, regarded in this light, possesses principles of a positive character; approximates closely to the certain sciences, and admits, for its practical application, problems for whose solution the elements of a determined induction may be applied. That is, the generality of fact, can and will be ascertained, as it respects vital organization, its actions, and its phenomena, and thus the laws of vitality will be developed; for the laws of nature are no more than universally observed facts. In proportion as we advance towards this point, will medicine be stript of its uncertainty; and its results be calculated with precision. Much has already been done towards the accomplishment of this noblest of human attainment—more is now doing, by the active and intelligent Physiologists of Europe and this country, in unfolding those laws, by demonstrative experiment and inductive reasoning, than has been, at any one time before undertaken.

The most hidden parts of the frame cannot escape their skilful researches—from the inmost recesses of the organization, is nature compelled to answer, and reveal her secrets, to their persevering and potent invocations. Already are many laws, or facts of uniform and universal occurrence determined: new ones are in the progress of establishment; and the errors of a false philosophy are rapidly disappearing.

The improvement of the science, I anticipate, may not be remote. The generality of numerous facts, in Physiology, or in other words, laws of vitality, is conclusively substantiated; many others remain, as yet, irrelative—are still to be connected and

generalized. A single discovery—the exposition of a single fact, may be sufficient to connect numerous phenomena—may constitute a nucleus, around which, they will immediately arrange themselves in beautiful and symmetrical harmony. Such has been the progress of improvement in other sciences. Most of the phenomena, resulting from gravity, were familiarly known, and even some laws depending on it were discovered. The calculations of astronomers were, however, defective—they only made approaches to accuracy. The discovery of a single general fact, the enunciation of a single law, by Sir Isaac Newton, dispelled the obscurities that hung around the science—and the Philosophy of the Universe was revealed.

Precisely in a similar manner, the discovery of a single general fact in relation to the production and order of occurrence of vital phenomena, may be sufficient to combine the phenomena of vitality, that now stand, apparently, either wholly unconnected, or but partially so; may serve to solve what now appear mysteries of vitality, and render our knowledge of vital phenomena, of the causes of diseases, the pathological conditions of the organism, and the operation of remedial means, clear and consistent. The philosophy of medicine will then be perfected.

Truth is always attained by slow and gradual approaches. We never light on it at once. Between the inception of its pursuit, and its attainment, are numerous gradations, each of which, as being consecutive, is to be passed through to arrive at the final result; and, often is it the subject of astonishment, that while the steps of the eager pursuer were hovering on the very point where it lay concealed, what to us appears so plain, could have escaped

detection. It was thus that Servetus and Cæsalpinus, had nearly anticipated the immortal discovery of Harvey—to which he was most probably led by their previous observations. Without the laws of Kepler, founded on calculations arising from partially known laws of gravitation, Sir Isaac Newton would not, it is equally probable, have made the happy generalization, which deservedly ranks him as the first of philosophers. In all likelihood, Haller and Bichat, have already opened the path; have made strait the way, which, pursued by some future Harvey or medical Newton, will lead to the disclosure of principles by which vital phenomena can be more accurately generalized, be subjected to a minute analysis, be brought within the sphere of our reasoning powers, and be the subjects of positive determination. If this portraiture of our science be not delusive, medicine, it will require no additional arguments to prove, may proudly claim the character of a high philosophy—based on fixed principles, and established in the immutable laws of organised matter.

It can only be cultivated profitably and advanced to perfection, by studying that organization, investigating those laws, and determining those principles. By this proceeding alone can be formed the ground-work of a sound and successful practice. The practitioner who cures a disease, the location and nature of which are unknown to him, or by a treatment, the mode of whose action he does not understand, or whose modifications of organs and functions he does not, or cannot determine, can never treat the same disease, or employ the same means, with an assurance of a similar result. He will often be disappointed by effects, the reverse of what he had calculated, and may even witness the aggra-

vation of the malady, by the very method that had before inspired a conviction of its salutary and positively curative operations. In the bitterness of his disappointment, he may even be led to reproach the science with perfidious uncertainty, when his own imperfect knowledge is the true subject of censure. Blind empirical experience, and dull routine, can offer no improvements, either to the science or its professors. Neither is it from new remedies we are to expect any material or extended advantages. The armoury of the practitioner is, at present, amply stored with the most efficient agents. The professional and general vulgar, it is true, commonly attribute the salutary effects of a medicine to some positive agency, directed against an offending being, or matter existing in the system, supposed to be the disease, and are constantly occupied in the research of these specific means. This notion, though common, is fallacious. Health consists in a certain state of the organic structure; in an equilibrium maintained in the organic or nutritive actions of the different organs and tissues, and a consequent equal distribution of the agencies and forces of life, adapted to the offices of each portion of the structure. In this manner is maintained, in a state of perfect integrity, the functions of the organs, or the offices of life. A departure from these conditions constitutes disorder and disease. The organic actions on which these conditions depend, may be augmented, diminished, or perverted; whence result disturbance or derangement of function, disorganization of structure, and death. Medicines cure diseases only as they affect the organic actions, and influence the functions: that is, by a modification of the existing phenomena. Whatever does not occasion some physiological

change in the organic actions, some modification of phenomena, cannot be a medicine—it being essential to the character of a medicine, that it be a disturbing or modifying agent.

This Therapeutic proposition, the truth of which cannot be disputed, demonstrates, that, to regulate with judgment and a probability of success, the deranged or unnatural actions and functions of the pathological condition, the practitioner must become familiarized with the active forces of remedial agents; he must disabuse himself from the prestiges of imaginary powers, with which they have been clothed, and direct them according to the organs they affect or modify, and the kind of medication, or the nature of the phenomena they provoke. How otherwise can he wield these potent weapons, acting oftentimes with fearful energy, without endangering mischiefs more formidable than those he would remedy? The same proposition is conclusive as to the inconsistency and absurdity of empirics, who pretend to accomplish cures of most formidable diseases by means of whose nature, powers, and mode of operation, they are utterly ignorant.

It may possibly be looked upon as supererogation to notice the pretensions of quackery. But it is useless to conceal the fact, that it possesses a strong hold on the confidence of the public; and it cannot be denied that many persons, respectable from their stations in society, and of influence from their talents, vindicate this social evil. It will not, I conceive, on this account, be passing the line of my duty, to examine and expose the fallacy of its pretensions. It is not unusual for the partizans of quackery to allege, that, if empirical medicines do no good, they are innocent, and will at least do no harm. But this is a deceptive and un-

sustainable assertion. If the remedy be capable of overcoming diseased phenomena, it must be endowed with active powers capable of doing mischief when wrongly directed; and, if it can do no harm, it must be inert, and cannot possibly do any good; it must be worthless, and its sale a fraud. No medicine, it may with propriety be said, performs any benefit of itself, by its inherent powers. Its sanative influence is a consequence of the timeliness and judiciousness with which its powers are applied to the modification of the organs of the economy, and the adaption of that modification to the existing condition of the organs. But, to this end are requisite, appropriate knowledge, sound judgment, accomplished skill. Improperly administered, the most sanative medicines become poisons, and simplest means prove injurious. If the empiric profess to prescribe his remedy, he is deficient in the knowledge that will enable him to do so, with safety to his patient. If he sell his remedy indiscriminately, it must of necessity prove injurious, quite as often, probably more frequently, than it is of service. Thus it is evident, that medicine cannot be, as it never has been, benefited by empiricism.

The success of empirics is founded on credulity, the offspring of ignorance. Effects our knowledge does not account for, are regarded as mysterious and marvellous. Whoever asserts boldly will find believers amongst the weak and ignorant; and, even the judicious and intelligent will be often staggered in their opinions, when not fortified by knowledge—by daring asseverations. Indolence also leads us to admit, and to believe, what we are told of, rather than trouble ourselves by investigating its truth—and we are credulous, because lazy. It is from these causes, that em-

perical remedies obtain a general credit for cures they never effected.

That a learned and experienced physician should cure a disease excites no surprise. It is a natural event—an effect for which an adequate cause is obvious. But that an ignorant, illiterate, and unskilful individual should be able also to accomplish cures, which he asserts in so confident a style as to win belief—belongs to the miraculous. It sets reason at defiance, it is in opposition to the usual course of things, and bewilders the understanding—and in nothing are mankind so easily deluded, and in nothing are they so pertinacious of belief, as in those things that are incomprehensible. The world is not so enlightened but that every miracle-monger, and prophet or prophetess (the more absurd, the more likely to prove successful,) can draw a crowd of followers. Mesmer and Cagliostro, Jemima Wilkinson, and Joanna Southcoate, belong to our age, and are memorable examples. It is on these principles the empirical pretender relies, to give currency to his illusions—that exalt into marvellous achievements a few successful results, to be attributed to the recuperative operations of the economy, wisely provided by the Creator for its protection, while a thousand sinister events, or false issues, can scarcely raise a suspicion of an ill-founded confidence. It is these grounds, that gives to quackery its power; that enables it to front, unblushingly, the seats of our science—to enter into rivalry with the indefatigable student and close observer of nature—and snatch from learning and intelligence its merited reward. Let it be here observed, the opposition of physicians to quackery, is founded on honourable motives. It does not originate in selfish

feelings.—They, more than any others, are conscious of its evils, have presented to them constantly, the evidences of its deception, and are daily witnesses of the perpetration of its mischiefs. In a pecuniary point of view, quackery but partially interferes with their interests. The poor and ignorant are most commonly its victims, and those who are deluded by its arts. It is they for whom the gratuitous aid of the profession is provided, by public institutions,—or is at their service, from the philanthropy of its members, who are the chief supports of quackery. The last dollar often procured by mendicancy, diverted from the necessities of life, is expended on the nostrum, in the vain expectation the extravagant and illusory promises of its virtues will be realised. There is not a medical man, who has not frequently been applied to, by those who have claimed his charitable offices, because longer incapable of satisfying the rapacious empiric, who, having robbed them of their last pittance, had left them, with their complaints unrelieved, or aggravated by his ignorance.

Almost every people, who have made advances in civilization, have attempted to prevent the evils of quackery, by governmental prohibitions and regulations.

It is not, however, by the interference of governments that quackery can be suppressed. The sphere of its impositions may be contracted by statutes and decrees, but cannot be destroyed. Its stronghold is in the ignorance of the community; and it is only by the diffusion of information, and especially of correct opinions of the nature of diseases and the operation of medicines, that it can be completely uprooted. When it is understood that disease is solely an aberration of the natural or physiological state of our

organs, and consequent derangement or suspension of functions; that it does not consist in the presence of matters foreign and noxious to the system; that the cure of diseases does not depend on the expulsion of such matters from the economy; but by subduing or changing the diseased condition, in opposing to the train of phenomena created by a morbid agent, a new train of phenomena proceeding from a medicinal means, and resulting from the employment of active, and, when injudiciously employed, dangerous agents, the necessity of instruction, learning, knowledge, and talent to accomplish these objects must become apparent. The absurdity and hazards resulting from a person ignorant of the structure of the organs and of the laws of vital phenomena, pretending to regulate them, will be too manifest to be denied. Who trusts with the conduct of a vessel, a man ignorant of her tackle, of the language in which to command her crew, of the principles or practice of navigation? Who would credit one, that should profess to be an artificer, a mechanician, even a tradesman, by a species of intuition, without having received instruction, and who could not explain a single operation of his employment? No one: because every one can comprehend, in these instances, the absolute necessity of previous knowledge, and the ridiculousness of such pretensions. The same sentiments and line of conduct will prevail in relation to medicine, when it shall be understood by the community, that it is a science of certain principles, of more numerous phenomena than are embraced in any other science, and is deduced from a knowledge of the structure, actions, and functions of the organs of the animal economy; and that the practice

of medicine consists in the philosophical application of those principles and of this knowledge.

But, does it become the medical profession to condemn the predilection of the community towards empiricism, while the beam is not plucked from their own eye? Can it be denied, that a large proportion of the profession, at this moment, embrace and blindly pursue doctrines and practices that are purely empirical? Is not medicine, for most of them, a collection of names ticketed upon certain symptoms, and of remedies ticketed upon those names? Have they not their universal medicines, their panaceas, prescribed in every disease, and remedies they pronounce to be gifted with specific virtues in every complaint? What is medicine of this character, but empiricism? In what does it differ from a common art or trade reduced to the capacity of the meanest intellect, and the most limited information? What higher intelligence does its attainment demand, than senses to perceive phenomena, and a memory to retain names? Can it be admitted that such is medicine, thus humble in its pretensions and with so much of penury in its means? Can this be true of the science, that the finest intellects through successive centuries have felt proud to cultivate, and to the improvement of which have been devoted some of the highest efforts of human genius? No, gentlemen, such is not medicine—that “divine art,” as it has been truly named, and whose claim to the elevation and dignity of an exalted and highly philosophical science, its professors may justly and proudly assert. No, gentlemen, believe it not; such is not medicine; truly does it not consist in the mere remembrance of precepts and the application of rules; it is not a

species of sleight to be acquired by practice. This medicine, which I do not hesitate to denounce, and which has been truly styled "blind and homicide routine," has been lamented by the great and the good of our profession, in all ages, as the source of endless mischiefs. Impressed deeply with this conviction, Hoffman, that bright luminary of the medical art, in his admirable dissertation—"De Septem Legibus Sanitatis," raises his warning voice against those who adopt it. "*Ultima jam lex est: fuge medicos et medicamina, si vis esse salvus.*"*

Medicine is not the offspring of human art, that can be perfected by the labours of an individual, or be acquired by rote. It is the daughter of time, to use the expression of a father of our science—"temporis filia." It is matured by long study, profound research, accurate observation; it is consummated by extensive and various knowledge, by careful and deep reflection, and by skilful combinations—practical excellence is attained by quick perceptions, judicious inductions, and copiousness of resources.

Such, gentlemen, is the science of medicine. You will find, in proportion as you advance in your knowledge, it is worthy of highest admiration. It is possessed of qualifications to inspire zeal and devotion in its pursuit, and a generous ambition for the possession of distinction in its profession. You may rest assured, that, however highly you may be gifted, or liberally instructed, it will present ample materials to the most active and prying curiosity, and afford exercise to the energies of the most talented intellect.

In the preceding part of this discourse, I have exposed and

* Note A.

animadverted on some of the principal defective methods, and erroneous opinions, that have prevailed, and continue to be cherished in medicine, greatly to its disadvantage. Others might be adduced, but, as less important and extensive in their influence, a particular designation of them may be dispensed with at this time.

Another object has been kept prominently in view. I have designed to produce a conviction, that medicine is a rational science; capable of acquiring, and destined to attain a high degree of certainty and precision, and which is to be accomplished by its restriction to positive phenomena, and the fixation of its principles. Let us examine what is to be understood by principles in a science, that we may, without further inquiry, determine the possibility of arriving at this result in medicine. Principles are facts, or phenomena, which, by the ordination of the Creator, belong to the constitution of things, and are a part of the elements of objects; they are invariable in their nature, uniform in their occurrence, and regular in their order. These facts govern, or are productive of other facts. They, and the inseparable concatenation they observe, are addressed to the senses and understanding. To be known, requires no more than attentive and dispassionate inquiry, clear and unbiassed observation, cautious and disciplined induction.

For convenience in discussion, arbitrary terms are employed to designate these phenomena, and which are of no other value than as expressive of positive facts. But unfortunately for the cause of truth, and progress of knowledge, these terms are frequently employed without understanding the phenomena they are in-

tended to communicate, are substituted for a knowledge of phenomena, or are adopted without attaching to them a determined phenomenon or series of phenomena. Whenever a term or phrase in science is not convertible into some well established facts, for which it merely serves as a sign, it is an evidence of its nullity; it can answer no useful purpose; beguiles with a delusive appearance of knowledge, and maintains discussions that are frivolous. The explanations based upon them should be rejected, and their employment in a science is the most certain evidence of its imperfect and uncultivated condition. To establish principles, no more is required than a knowledge of the phenomena occurring in a regular order, and which observation and research will empower us to arrange into their natural series; in other words, to compose formulæ of the phenomena, the object of our investigation.

That the phenomena of animated beings are susceptible of this arrangement, I shall on this occasion be contented to affirm. I have already partially alluded to circumstances that prove the position, and on a former occasion of this nature, cited the evidences, such as I believe to be irrefutable demonstration of its correctness and general application, to all organised beings; especially to man in health, in disease, and as influenced by hygienic and therapeutic agents.*

It is the universality of these phenomena that makes medicine a science—that gives it form and feature. Were it otherwise, observation could have no value, reasoning would be wholly inconclusive, and experience could confer no advantage. The universality of these facts, demonstrates, that vital phenomena, like physical

* An Introductory Lecture to the Institutes of Medicine, published by request of the Class, 1827.

phenomena, are subjected to positive laws—and, under the same circumstances, are uniformly the same.

The laws of the physical sciences, by the employment of a correct philosophy, have been elucidated with clearness, and determined with precision. There can be no reason assigned, why the laws of the physiological sciences should be, or are, inscrutable in their nature. We know they are not; as a great number are already ascertained, and are acted on with perfect confidence. Investigated in the spirit of the same philosophy, it cannot be doubted, that vital laws will acquire the same precision as those of physics; and medicine, as a certain science, will rank with the physical sciences.

The next consideration claiming attention, is the method of philosophyizing; or, in other words, of observing and reasoning, that has led to certainty in the physical sciences, and whose adoption into medicine will give principles of equal certainty to the physiological sciences.

All our positive knowledge is limited to phenomena, or to the appearances of things. They constitute the proper subjects of observation and investigation. The remote, or first cause, the active force from which they proceed, abstracted from the cognoscence of our faculties, and inapproachable by our modes of research, can be known no otherwise than by the effects or the phenomena it produces.

The history of the human intellect, in its acquisition of knowledge, exhibited in the progress of every science that has attained a state of maturity, exhibits its subjection to a fundamental law. This law, founded in the organization of the mind itself, consti-

tutes its mode of philosophyzing, or mode of comprehending facts, or the production of phenomena. It has given rise, consequently, as has been remarked by M. Compté, to three general methods of philosophy in every science, forming as many states or eras, through which they have successively passed in their progress to improvement. These are: first, the fictitious, superstitious, or theological state; second, the abstract or metaphysical state; third, the positive or demonstrative state.

The human mind, in the first periods of the acquirement of knowledge, plunged in the profoundest ignorance, cannot discern through the darkness which surrounds it, the connexion existing between the phenomena of the universe; it cannot possibly comprehend their mutual dependencies and relations as constituting one vast whole. Each is seen separately, as an isolated fact, and its production is then explained by a resort to a first cause, a supernatural power. Hence arose the mythology of the ancients, or the deification of the first causes of material phenomena.

The connexion and dependency of phenomena, as causes and effects, becoming developed with the progress of knowledge, produces a modification of the first system, which gradually ends in the formation of the second. Supernatural agencies are no longer invoked; but the mind, still irritated with the desire to ascertain first causes, calls to its aid abstract forces or powers, creates entities, or personifies abstractions. The metaphysical state now prevails.

In the further progress of knowledge, the mind reaches the conviction of the impossibility of determining first or final causes, and abandons the vain attempt to penetrate the essences of things,

or to explain phenomena by a knowledge of their intimate causes. Justly estimating its own powers, and the nature of human knowledge, it limits its researches, and seeks to determine the nature of phenomena, and the laws of their production, or the invariable order of their succession and similitude, by the employment of the senses, of observation, and the exercise of reason or induction. Science, then, has arrived at the destination where truth awaits it. It is positive and demonstrative.

The history of every science exhibits this order of succession, and the different systems of philosophy that have governed it—fictitious, metaphysical, and those that have reached it—the positive. Medicine strikingly displays this invariable law of the human understanding, in the progression and development of knowledge.

In its first existence, exercised by the priesthood, as it is at the present day amongst all savage tribes, it embodied all the superstition of the age, and was a sacred rite of the temple and its servitors, dedicated to the worship of the healing god. The authors of the Hippocratic writings, emancipated it from this thralldom, and introduced the metaphysical era, by their speculations on the elements, and the intimate causes of diseases. The metaphysical medicine of the ancients reached its highest development from the speculations of the talented and intellectual Galen. Ancient medicine never approached the positive state.

The renovation of medicine, after its extinction with the light of general knowledge and science, by the barbarian hosts of the desolate North, that swept into ruins the fabric of Greek and Roman civilization, arts, and science, found it again relapsed into

its period of fiction, superstition, and ignorance. Confined to the cloister of the cenobite, it partook of the theological opinions of the age, successively changed for the astrological, theosophical, cabalistical, and magical doctrines then prevalent in that rude and barbarous era. To these succeeded, with the revival of the Galenical medicine by the Arabs, its metaphysical philosophy, modified and improved on by Van Helmont and Stahl, in the personification of an *archæus* and *vis medicatrix*, and ultimately perfected by Hoffinan, Cullen, Brown, and Darwin. Metaphysical philosophy still continues to predominate in our science. It prevails to a greater or less extent in all the doctrines most in vogue at this period; the doctrines of Hanneman, of Rasori, and of Broussais, though mingled with positive science. Metaphysical medicine approaches its termination; the era of demonstrative or positive medicine has commenced; it now lies open before the profession, and it is for the youthful, the vigorous, and the unprejudiced, to enter on it with resolution and discipline, and the last glorious revolution of our science, that will forever fix its doctrines on the immutable basis of truth, will be accomplished.

It now remains, for the conclusion of this discourse, to examine what is to be understood by positive and demonstrative medicine.

In the physical sciences, the attention of philosophers was not long diverted from the study and observation of phenomena, as in medicine, by idle and presumptuous speculations on the nature of first causes. They consequently have much earlier succeeded in fixing the order of succession, or constituting the formulæ of the phenomena they observe. Their science is accordingly certain.

The facts of vitality, or phenomena of organised matter, from their apparent endlessness, at a first glance, might be supposed to defy every attempt to arrange them into general series, formulæ, or laws. A slight observation will not fail, however, to produce a conviction, that, in harmony with the rest of the universe, perfect order reigns in the phenomena of organised or living beings. Not one can or does occur out of its proper location. But, wherever order prevails, co-ordination exists, and arrangement is possible.

We cannot examine, even in a superficial manner, organic phenomena, without being struck with their connexion; without having forced on us the conviction, that they constantly succeed each other in a given order, and invariably exist, in the same relations, under similar circumstances.

To acquire positive knowledge of vital or organic phenomena, we have only to observe, to analyse, and to arrange them, in the order in which a sound observation demonstrates they are unchangeably manifested. Each phenomenon of every organ in its healthy state or morbid condition, is, alternately, the effect of that by which it was preceded, and the cause of that which succeeds to it. The classification of phenomena in this order will, consequently, form series or formulæ, or general laws, possessing a constant character; and each series will consist of invariable and homogeneous phenomena. A single fact, or series of phenomena, indisputably settled, constitutes the postulates and axioms of a science, the elements or first principles from which reasoning is commenced, whence correct inductions are to be drawn, and that are applicable to the solution of the numerous problems arising in its practice.

To be capable of predicting or foreseeing events in vital phenomena, we have, therefore, only to know those phenomena that succeed to a given phenomenon, or in other words, to know the place or location a phenomenon occupies in any given series. Possessed of this information, and acquainted with the whole series, we can announce all that has preceded, and can predict all that will ensue.

To control vital actions or phenomena, and modify them according to our disposition, which is the great object of medicine as a science, will depend, then, on the power we may possess to interrupt the progress of a series of phenomena, and to introduce other phenomena, supplanting those already existing, and that will have a more salutary tendency.

In the science of medicine, an immense number and variety of formulæ or series requires to be composed for the entire establishment of its principles, and an extensive combination of these must yet be effected, before its edifice can be completed, or placed on the basis of a certain science.

The phenomena, in relation to each element of the animal structure, in a natural state, constitute physiological anatomy; and for the diseased condition, is pathological anatomy; the phenomena constituting the offices or functions of each organ, in its normal or natural state, constitute physiology; the phenomena manifested in the organs in an anormal or diseased mode, form pathology; the phenomena arising from the modifications caused in the different organs by medicinal and remedial agents, by the moral and physical influences that surround us, compose the departments of therapeutics and hygiene. These various phenomena are suscep-

tible of arrangement in a regular order, or may be adjusted into formulæ, forming the different departments of medicine. The combination of these formulæ compose the science of medicine, and their application, under the direction of intelligence and experience, for the preservation of the corporeal frame from dissolution, and the restoration of health, constitutes the practice of medicine, the noblest of arts, culminating in the hemisphere of science, and diffusing its genial blessings on mankind.

This, gentlemen, is what I understand by medicine of principles: this is medicine as a science: this is medicine as positive philosophy. It is medicine stripped of ontology, rescued from the jargon of unmeaning terms, and forming a compact body of facts.

The course of instruction deputed to my charge, will have for its object, to impart, as far as the imperfect state of our information, and my feeble abilities, unequal to the arduousness of the task, will admit, this character to the science you cultivate, and the responsible profession to which you propose to devote your future lives. Much will depend on yourselves, for the success that will attend our mutual labours. In the vast field that lies before you, I can do little more than mark your route, direct your progress, and aid your well directed exertions—your failure must rest upon yourselves. Every inducement that can stimulate ambition and animate to zeal, exists in our science, to call forth the energies of which you are capable. Apply yourselves with diligence, and the bright reward, that in distant perspective invites your eager pursuit, and awakens ambitious aspirations, will be placed within your grasp. Fame and distinction will attend you; the recompense of valued services will swell your resources; and,

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above all, you will enjoy that internal light of the soul, the purest source of human happiness, arising from the consciousness of a useful life, and the daily performance of meritorious deeds.

Appropriately, then, may you be addressed in the language of the poet:

So may you ever
Be styled the hands of heaven, Nature's restorers:
Get wealth and honours, and by your success
In all your undertakings, propagate
A great opinion in the world.

BEAUMONT AND FLETCHER—CUSTOM OF THE COUNTRY.



NOTE A.

In the commentary on this precept, Hoffman cites in its support, amongst others, the authorities of Wepfer and Brunner. “Ad hujus imitationem, solertissimi Helvetorum pratici, Wepferus et Brunnerus, consiliis suis, perpetuo fere istud adjiciunt: *Fuge medicos et medicinam*.

He afterwards explains the meaning of this rule, and designates its application to those who rashly and profusely prescribe very active medicines for the cure of all diseases to the neglect of diet.

“Valet hoc dictum maxime de medicis imperitioribus, temerariis, qui non victu curare volunt, sed valentioribus adversus morbos omnis generis pugnant, eos que multis remediis præcavere tentant. Neque vero medici docti, periti et prudentes hunc censum subecint, quorum conversatio et familiaritas nunquam non omnibus utiles et fructuosa est.”—Opera, vol. vi. p. 316.

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